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| 22850 | 7590 | 04/02/2009 | | |
| OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314 | | | | |
| EXAMINER | | | | |
| MATZEK, MATTHEW D | | | | |
| ART UNIT | | PAPER NUMBER | | |
| 1794 | | | | |
| NOTIFICATION DATE | | DELIVERY MODE | | |
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary

Application No.

10/581,686

Applicant(s)

PLISSONNIER ET AL.

Examiner

MATTHEW D. MATZEK

Art Unit

1794

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 December 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3 and 6-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 6-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 June 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SI/08)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____
- Paper No(s)/Mail Date _____

Response to Amendment

1. The amendment dated 12/18/2008 has been fully considered and entered into the Record. Claims 4 and 5 have been cancelled. New claims 6-8 have been added. The new claims contain no new matter. Claims 1-3 and 6-8 remain active. The previous objection to the Specification and abstract has been withdrawn due to amendment. The previous anticipatory rejection inadvertently rejected claims 1 and 2. Examiner's intent in said rejection was to reject claims 1 and 3. This was articulated in the body of the rejection which clearly addressed the use of carbofluorinated polymer as recited in present claim 3.

Claim Rejections - 35 USC § 102

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

2. Claims 1, 3, 6 and 7 are rejected under 35 U.S.C. 102(e) as being anticipated by Dubrow (US 2005/0181195 A1) which claims priority to provisional application 60/466,229 filed 4/28/2003.

Dubrow discloses structures comprising a plurality of nanofibers [0007] from a solid substrate [0068], which Examiner has equated to the claimed "carpet", and the surfaces of said nanofibers have been coated with superhydrophobic materials [0036]. The hydrophobic materials available to coat the nanofibers include carbofluorinated polymers (claim 24). Carbofluorinated polymers are both hydrophobic and lipophobic which results in an amphiphobic material [0002 and 3]. The applied reference teaches that the

phobic coatings may be applied to the entire surface of the nanofiber [0108]. Example 1 demonstrates that the coating would impregnate the spaces between the nanofibers because the water has done this prior to the nanofibers coating. This impregnation would result in the claimed continuous polymer film and the surface between the nanofibers is covered with a layer of the polymer used to coat the nanofibers.

Claim Rejections - 35 USC § 103

3. Claims 2 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dubrow (US 2005/0181195 A1).

Dubrow discloses a number of different materials of differing compositions that may serve as nanofibers [0044, 0047, 0068]. The reference also discloses that while carbon nanofibers are not preferably used in the applied invention, "[t]he nanofibers of the invention...can be fabricated from essentially any convenient material or materials." Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to use carbon nanofibers as the "nanofiber", because the manufacture of carbon nanofibers is convenient and pre-fabricated nanofibers are readily available with volumes of analytical data already available for carbon nanofibers.

Response to Arguments

4. Applicant's arguments filed 12/18/2008 have been fully considered but they are not persuasive.
5. Applicant argues that Dubrow fails to provide for the claimed invention in that it does not disclose nanofibers' surfaces that have been treated with a liquidphobic material to make the nanofibers a liquidphobic material. Applicant continues by stating that the nanofibers of Dubrow can be attached to a substrate and need not be entirely coated. Applicant is correct in that Dubrow does provide for embodiments that do not cover the entire nanofiber with the liquidphobic. However, the applied reference states that in "typical embodiments" the nanofibers comprise an exogenous liquidphobic material. The fact that Dubrow explicitly teaches that other embodiments do not cover the entire nanofiber the "typical embodiments" do in fact provide for the claimed coverage of coating. Applicant is also directed paragraphs 0069 and 0071 which does provide for the coating of the entire nanofiber with the liquidphobic material. Applicant is also directed Figure 7 which clearly illustrates the nanofibers being entirely coated with the liquidphobic material.
6. Applicant argues that the immersion process of Dubrow does not produce the claimed invention in that the entire nanofiber does not become completely coated and the surface between the nanofibers is not covered with the same polymer as the nanofibers. Examiner has reviewed the reference cited in Applicant's Specification and does not see where said reference supports Applicant's position that immersion does not result in the claimed process. Furthermore, Dubrow immersed the nanofiber covered material in water prior to its polymeric coating and liquid is wicked from the surface and spread until the voids between the nanofibers

were filled. Therefore, the immersion process of Dubrow would allow the polymer to behave in the same manner and fill the voids between the nanofibers and provide a continuous polymeric film coating of the substrate upon which the nanofibers have been placed.

7. Applicant argues that Figure 7 of Dubrow illustrates that the surface between the nanofibers is not covered with the same polymer as the nanofibers. The intent of Figure 7 is to illustrate that the nanofibers are completely coated by polymer [0028]. Applicant continues by stating that it is incorrect to infer that both the nanofibers and the surface between the nanofibers must be covered in order for Dubrow's structure to possess the desired hydrophobicity.

Examiner has taken the position that the surface between the nanofibers would be covered due to the immersion process used by Dubrow to coat the nanofibers with the polymer.

8. As Examiner set forth *supra*, the previous Office Action's anticipatory rejection covered the limitations of claims 1 and 3 and claim 2 was rejected under an obvious rejection. Examiner apologizes for the oversight and any resulting confusion, but did address all of the previously active claim limitations.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MATTHEW D. MATZEK whose telephone number is (571)272-2423. The examiner can normally be reached on M-F, 9-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Larry Tarazano can be reached on 571.272.1515. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Matthew D Matzek/
Examiner, Art Unit 1794

/D. Lawrence Tarazano/
Supervisory Patent Examiner, Art Unit
1794